Establishing recovery goals for the spectacled and Steller's eider, ESA-listed species.

Paul R. Wade, National Marine Mammal Laboratory.

Two species of eiders that nest in Alaska have recently been listed as threatened. Spectacled eiders are known to nest in three main areas: (1) Yukon-Kuskokwim delta in western Alaska, (2) arctic north slope of Alaska, and (3) arctic Russia. Breeding bird surveys going back to the late 1950's documented a substantial decline in numbers of spectacled eiders breeding on the Yukon-Kuskokwim delta, which led to listing as threatened for the species world-wide. Subsequent research found mtDNA differences between the three nesting areas, despite the fact that birds from all three areas apparently mix in winter. Their winter habitat had previously been unknown, but satellite tagging research led to the recent discovery that many (if not all) spectacled eiders spend several months of the winter in open-ice leads south of St. Lawrence Island in the Bering Sea. In light of the genetic data, the possibility of splitting the species into distinct population segments (DSPs) was considered. These genetic differences, along with the differences in nesting habitat between the Yukon-Kuskokwim delta (sub-arctic) and the north slope (arctic tundra) led to the creation of three DSPs. A population survey that produced high abundance estimates led to the de-listing of the arctic Russia DSP. Both DSPs in Alaska were kept as threatened, and identical recovery goals were specified for both, based on estimates of extinction risk from population viability analysis (PVA).

Less information is known about Steller's eiders. Similar to spectacled eiders, Steller's also nested historically in western Alaska (including the Yukon-Kuskokwim delta), on the north slope of Alaska, and in arctic Russia. Birds from western Russia migrate into the north Atlantic and Baltic Sea; birds in eastern Russia and Alaska migrate to the Bering Sea, and spend the winter along the Alaska Peninsula and the Aleutian Islands, with a particularly large number found at the Izembek National Wildlife Refuge. Winter surveys found declining numbers in Izembek Lagoon, and an investigation of current breeding locations indicated a substantial contraction in breeding range in western Alaska and the north slope of Alaska, which led to the listing of the species in Alaska. In fact, many years went by with no record of breeding found in western Alaska, but nests have recently been discovered in the Yukon-Kuskokwim delta. The Steller's eider Recovery Team, in concert with the U.S. Fish and Wildlife Service, have debated whether the species should be split into two DSPs in Alaska. If Alaska is kept as one DSP, recovery goals will likely be based in part on PVA calculations of the risk of extinction that considers the joint probability of extinction of the two apparently independent nesting areas in Alaska. Genetic studies have been recommended to investigate this issue. In particular, an investigation of the genetics of historical materials collected in western Alaska might shed light on whether the species went extinct in western Alaska and has recently been re-colonized by birds from other nesting areas, or whether birds have continued to nest in western Alaska in low numbers but went undetected for many years. If Alaska is split into two DSPs, similar recovery goals will likely be established for each DSP separately. Concern has been raised that numbers of breeding pairs may have never been substantial in western Alaska, and recovery goals from PVA modeling may therefore be unachievable. However, it is not clear that enough information exists to be able to draw any firm conclusion on how many Steller's eiders may have bred historically in western Alaska.